

CLAIMS

1. **(Previously Presented)** A computer-implemented method for processing video data comprising:

 determining an ideal playback timing associated with the video data, the ideal playback timing determined at least in part by way of information encoded in the video data; and

 if an actual playback timing of the video data lags the ideal playback timing, the lag resulting from a limited processing power of the computer implementing the method, varying a frame rate associated with the video data using a smoothing function to recover toward the ideal playback timing, wherein smoothly varying the frame rate includes controlling the frame rate using a frame-dropping algorithm that drops frames in the video data in accordance with the smoothing function.

2. **(Canceled)**

3. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein controlling the frame rate includes:

 computing a delay by comparing the actual playback timing with the ideal playback timing; and

 if the delay exceeds a threshold value, determining that the actual playback timing lags the ideal playback timing.

4. **(Original)** The computer-implemented method as recited in Claim 3, wherein the threshold value accounts for ordinary system variations.

5. **(Original)** The computer-implemented method as recited in Claim 3, wherein the delay is computed by subtracting the ideal playback timing from the actual playback timing.

6. **(Original)** The computer-implemented method as recited in Claim 3, wherein the smoothing function incorporates the delay as a variable.

7. **(Original)** The computer-implemented method as recited in Claim 3, wherein the delay is computed as an average delay that includes an average of the delay associated with a current frame of the video data and at least a delay associated with a previous frame.

8. **(Original)** The computer-implemented method as recited in Claim 7, wherein the average delay is an average of delays associated with the current frame and a plurality of previous frames.

9. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein the frame-dropping algorithm includes a rasterization algorithm.

10. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein the frame-dropping algorithm includes if a current frame is a B-frame, dropping the current frame.

11. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein the frame-dropping algorithm includes if a current frame is an I-frame, showing the current frame without further determination.

12. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein the frame-dropping algorithm includes if a current frame is a P-frame, processing the current frame to obtain enough information for processing subsequent frames before dropping the current frame.

13. **(Previously Presented)** The computer-implemented method as recited in Claim 1, wherein the frame-dropping algorithm includes if the actual playback timing does not lag the ideal playback timing, overriding any determination to drop frames.

14. **(Original)** The computer-implemented method as recited in Claim 1, wherein the ideal playback timing is determined from a presentation clock.

15. **(Original)** The computer-implemented method as recited in Claim 14, wherein the presentation clock includes a filter configured to remove noise.

16. **(Original)** One or more computer-readable memories containing a computer program that is executable by a processor to perform the computer-implemented method recited in Claim 1.

17. **(Previously Presented)** A computer-implemented method for managing video data frame rates comprising:

- determining delays associated with playback of frames of video data;
- calculating an average delay from averaging the delays;
- determining an ideal frame rate associated with the frames;
- calculating a frame skip factor; and
- varying the frame rates associated with the playback by applying a frame-dropping algorithm configured to determine whether to drop a current frame using the frame skip factor, wherein the frame-dropping algorithm includes:

- if the frame skip factor is greater than the ideal frame rate, adding the ideal frame rate to an iterator; and
 - if the iterator is greater than or equal to the frame skip factor, subtracting the frame skip factor from the iterator and showing the current frame.

18. **(Original)** The computer-implemented method as recited in Claim 17, wherein the frame skip factor is calculated with a tolerance factor that accounts for variability in a system timer.

19. **(Original)** The computer-implemented method as recited in Claim 17, wherein the frame-dropping algorithm includes an iterative algorithm that varies the frame rates using a smoothing function that includes the frame skip factor.

20. **(Canceled).**

21. **(Previously Presented)** The computer-implemented method as recited in Claim 17, wherein the frame-dropping algorithm includes if the iterator is less than the frame skip factor, dropping the current frame.

22. **(Original)** The computer-implemented method as recited in Claim 21, wherein the frame-dropping algorithm includes:

if the iterator is less than the frame skip factor, determining whether the average delay has reached a significant percentage of a maximum delay; and

if so, showing the next I-frame subsequent to the current frame.

23. **(Original)** The computer-implemented method as recited in Claim 17, wherein priority is given to the execution of the computer-implemented method to improve the quality associated with the calculated frame rates.

24. **(Original)** One or more computer-readable memories containing a computer program that is executable by a processor to perform the method recited in Claim 17.

25. **(Previously Presented)** An apparatus comprising:

means for determining delays associated with playback of frames of video data; means for calculating an average delay from averaging the delays;

means for determining an ideal frame rate associated with the frames;

means for calculating a frame skip factor; and

means for controlling the frame rate using a frame-dropping algorithm that drops frames in the video data in accordance with the skip factor, wherein the frame-dropping algorithm includes:

if the skip factor is greater than the ideal frame rate, adding the ideal frame rate to an iterator; and

if the iterator is greater than or equal to the frame skip factor, subtracting the frame skip factor from the iterator and showing the current frame.

26. **(Canceled)**

27. **(Previously Presented)** The apparatus as recited in Claim 25, further comprising means for buffering the video data so that the frame-dropping algorithm is executing ahead of real time.

28. **(Previously Presented)** The apparatus as recited in Claim 25, further comprising means for incorporating a rasterization algorithm into the frame-dropping algorithm.

29-32 (Canceled).

33. (Previously Presented) An electronic device comprising:
a memory; and
a processor coupled to the memory, the processor being configured to:
determine delays associated with playback of frames of video data;
calculate an average delay from averaging the delays;
determine an ideal frame rate associated with the frames;
calculate a frame skip factor; and
vary a frame rate associated with the playback by applying a frame-dropping algorithm configured to determine whether to drop a current frame using the frame skip factor, wherein the frame-dropping algorithm includes:
if the frame skip factor is greater than the ideal frame rate, adding the ideal frame rate to an iterator; and
if the iterator is greater than or equal to the frame skip factor, subtracting the frame skip factor from the iterator and showing the current frame.

34-35. (Canceled).

36. (Previously Presented) The apparatus as recited in Claim 25, wherein the frame skip factor is calculated with a tolerance factor that accounts for variability in a system timer.

37. (Previously Presented)

The apparatus as recited in Claim 25, wherein the frame-dropping algorithm includes an iterative algorithm that varies the frame rates using a smoothing function that includes the frame skip factor.

38. (Previously Presented) The apparatus as recited in Claim 25, wherein the frame-dropping algorithm includes if the iterator is less than the frame skip factor, dropping the current frame.

39. (Previously Presented) The apparatus as recited in Claim 38, wherein the frame-dropping algorithm includes:

if the iterator is less than the frame skip factor, determining whether the average delay has reached a significant percentage of a maximum delay; and

if so, showing the next I-frame subsequent to the current frame.

40-43 (Canceled)